

JS 6/2/21
RJA 2/18/22

SAT Report for Case # P-19-0009

General

Report Status:	Complete	Status Date:	12/11/2018
CRSS Date:	11/01/2018	SAT Date:	11/02/2018
Consolidated PMN?	N	SAT Chair:	William Irwin
Consolidated Set:			
Submitter:	Allnex USA Inc.		
CAS Number:			
Ecotox Related Cases:			
Health Related Cases:			
Chemical Name:			
Use:	Corrosion protection additive in resin for cathodic electrodeposition dip coating for metal substrates. Amine FGEW = 777 by charge, 782 by termination. Formaldehyde FGEW = 981 by charge, 1565 by termination. Combined FGEW = 434 by charge, 521 by termination. Analogue		
Trade name:	RESYDROLA® SWE 5862/37 liquid coating resins		
PV Max (kg/yr):			
Ecotox Assessor:	Gallagher, Jeffrey	Fate Wong, Assessor:	Edmund
		Health Jacobs, Assessor:	Keith

Physical Chemical Information

Molecular Weight:	3129.0	Physical State - Neat:	
Percent 500:	1.2	Percent 1000:	5.7
Melting Point (Measured):		Melting Point (est):	
Vapor Pressure:		Vapor Pressure (est):	<0.000001
Water Solubility:		Water Solubility (EST):	Dispersible
Log Kow:		Log P	
Log P:		Comment:	
		MPD (EPI):	
		VP (EPI):	
		Water Solubility (EPI):	
		Log Kow (EPI):	

SAT Concern

Ecotox Rating (1):	3	Ecotox Rating Comment (1):	
Ecotox Rating (2):		Ecotox Rating Comment (2):	
Health Rating (1):	1-2	Health Rating Comment (1):	
Health Rating (2):		Health Rating Comment (2):	

PBT Ratings

Persistence	Bioaccumulation	Toxicity	Comments
3	1	2	

--

Exposure N
Based Review
(Health)?
Exposure Based N
Review
(Ecotox)?
SAT Lung;
Keywords: EcoTox

Fate Assessment P-19-0009

Summary: FATE: MW = 3129 with 1.2% < 500 and 5.7% < 1000

S = Disp.

VP < 1.0E-6 torr at 25 °C

(E)

BP > 400 °C (E)

H < 1.00E-8 (E)

POTW removal (%) = 90

via sorption

Time for complete ultimate aerobic biodeg > mo

Sorption to soils/sediments = v.strong

PBT Potential:

P3B1

FATE: Migration to ground water = negl

PMN

Material:

Overall wastewater treatment removal is 90% via sorption.

Sorption to sludge is strong based on data for high molecular weight polymers.

Air Stripping (Volatilization to air) is negligible based on data for high molecular weight polymers.

Removal by biodegradation

in wastewater treatment is negligible based on data for high molecular weight polymers.

The aerobic aquatic biodegradation half-life is

greater than six months based on data for high molecular weight polymers.

The anaerobic aquatic biodegradation half-life is greater than six months based on the aerobic biodegradation half-life. The anaerobic biodegradation half-life is projected to be greater than or equal to the aerobic biodegradation half-life.

Sorption to soil and

sediment is very strong based on data for high molecular weight polymers.

Migration to groundwater is negligible based on data for high molecular weight polymers.

PMN Material:

Very Persistent (P3)

based on the estimated aerobic and anaerobic biodegradation half-lives.

Low Bioaccumulation (B1) based on data for high molecular weight polymers.

Bioconcentration/Bioaccumulation factor to be put into

E-Fast: N/A.

**Removal⁹⁰
in WWT/POTW
(Overall):**

Condition	Rating Values w/ Rating Description	Comment
WWT/POTW	3	
Sorption:		
WWT/POTW	4	
Stripping:		
Biodegradation	4	
Removal:		
Biodegradation		
Destruction:		
Aerobic Biodeg	4	
Ult:		
Aerobic Biodeg		
Prim:		
Anaerobic Biodeg	4	
Ult:		
Anaerobic Biodeg		
Prim:		
Hydrolysis (t_{1/2}		
at pH 7,25C) A:		
Hydrolysis (t_{1/2}		
at pH 7,25C) B:		
Sorption to	1	
Soils/Sediments:		
Migration to	1	
Ground Water:		

Condition	Rating Values w/ Rating Description	Comment
Photolysis A, Direct: Photolysis B, Indirect: Atmospheric Ox A, OH: Atmospheric Ox B, O3:		

Health

Assessment

Health Summary: Absorption is expected to be NIL all routes for the parent polymer and NIL to poor all routes for the low molecular weight fractions (p-chem). There is concern for poly-cationic binding to lung membranes. Routes of Dermal , Oral, Exposure: Inhalation

Test Data Submitted

Test Data Submitted:

Ecotox Assessment

Test organism	Test Type	Test Endpoint	Predicted	Measured	Comments
Fish	96-h	LC50	2.4		
Daphnid	48-h	LC50	4.9		
Green Algae	96-h	EC50	0.67		
Fish	-	Chronic Value	0.13		
Daphnid	-	Chronic Value	0.35		
Green Algae	-	Chronic Value	0.18		

Factors	Most Sensitive Endpoint	Assessment Factor	CoC	Comment
Acute Aquatic:	670	4	168	Algal EC50
Chronic Aquatic:	130	10	13	Fish chronic value

Ecotox Route of Exposure? All releases to water

Factors	Values	Comments
SARs:	Polycationic Polymers	
SAR Class:	Polymers-cationic-dispersible-1.8% A-N	
TSCA NCC Category?	Polycationic Polymers	

Recommended Testing

Ecotox

Value Comments

EPA determined environmental hazard for this new chemical substance based on SAR predictions for cationic polymers (special class within ECOSAR v.2.0; 1.8% A-N [using amine FGEW of 777]); MW 3129 with 1.2% <500 and 5.7% <1000; [REDACTED] with an unknown MP (P); S = dispersible (P); effective concentrations based on 100% active ingredients and nominal concentrations; hardness <150 mg/L as CaCO₃; and TOC <2.0 mg/L; Mitigation

of toxicity expected in the presence of 10 mg TOC/L, i.e., 22x humic acid mitigation due to 1.8% A-N.

Ecotox

Factors Comments

Environmental Hazard: Environmental hazard is relevant to whether a new chemical substance is likely to present unreasonable risk because the significance of the risk is dependent upon both the hazard (or toxicity) of the chemical substance and the extent of exposure to the substance. EPA determined environmental hazard for this new chemical substance based on SAR predictions for cationic polymers (special class within ECOSAR v.2.0; 1.8% A-N [using amine FGEW of 777])). Acute toxicity values estimated for fish, aquatic invertebrates and algae are 2.4 mg/L, 4.9 mg/L, and 0.67 mg/L, respectively. Chronic toxicity values estimated for fish, aquatic invertebrates, and algae are 0.13 mg/L, 0.35 mg/L, and 0.18 mg/L for fish, aquatic invertebrates, and algae, respectively. These toxicity values indicate that the new chemical substance is expected to have high environmental hazard. Application of assessment factors of 4 and 10 to acute and chronic toxicity values, respectively, results in acute and chronic concentrations of concern of 0.168mg/L (168 ppb) and 0.013 mg/L (13 ppb), respectively.

Environmental Risk: Risks to the environment were evaluated by comparing estimated surface water concentrations with the acute and chronic concentrations of concern. Acute risks to the environment were not identified due to releases to water that did not exceed the acute COC. Chronic risks to the environment were identified for this PMN based on the chronic COC of 13 ppb being exceeded for [REDACTED] (surface water concentration [SWC]: 38.7 ppb) during processing and being exceeded for [REDACTED] (SWC: 148 ppb) during use.